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Mr. Bob Maupin
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RENEWABLE ENERGY PROJECTS IN BOULEVARD AND JACUMBA

Dear Mr. Maupin:

At the request of District 2 County Supervisor Dianne Jacob and Chief Administrative Officer Helen Robbins-Meyer, I am responding to your email inquiry regarding renewable energy projects in Boulevard and Jacumba. In the email dated February 20, 2013, you requested answers to questions related to roads, water, dust and runoff, glare, heat generated by solar farms, and wind turbines. In order to provide you with accurate and complete information, staffing resources, both internally and externally from Planning & Development Services (PDS) were utilized. Below is a summary response to each of the subject areas included in your email from Project Planning (PDS), Land Development (PDS), Advanced Planning (PDS), and the San Diego County Fire Authority within the County's Public Safety Group.

On the issue of roads, all discretionary projects are required to analyze their impacts to roads and intersections to ensure adequate capacity and safety pursuant to the California Environmental Quality Act (CEQA). During project review, if it is determined that improvements need to be made to the roads to address impacts to capacity and safety, the project would be conditioned to complete all necessary road improvements. In all cases, however, the applicant is responsible for the maintenance and repair of any damage to roads caused during the construction of the project.

On the issue of water, it is crucial that long-term groundwater supplies are carefully evaluated for projects within the County's jurisdiction. Most solar projects in the Boulevard and Jacumba community are groundwater dependent. For the Soitec Tierra Del Sol project, the County is requiring a groundwater investigation to analyze the aquifer of the well to be utilized and will evaluate well interference on the nearest offsite wells. Additionally, there is also a cumulative analysis being performed to address potential long-term impacts of groundwater use in the area. To mitigate impacts to groundwater resources, the Major Use Permit will likely be conditioned to have a maximum amount of groundwater that is allowed to be pumped during

the construction phase of the project and the ongoing water use once established. A monitoring well network will also likely be required in which water level thresholds would be set in order to ensure impacts to offsite wells remain less than significant. With these measures in place, this should preclude the possibility of offsite wells going dry as suggested in your comments. Lastly, the application of a permeable soil binding stabilization agent on the ground surface will be non-toxic and would not have any long term effects on water quality in the area.

On the issue of dust and runoff, to minimize the occurrence of dust related to construction and on-going operations of the facility, a permeable soil binding stabilization agent will be applied bi-annually to the surface of all onsite roads. The applicant also proposes to use disintegrated granite or will replant the access roads with a native seed mix to control dust. All of these methods allow for infiltration of water into the ground.

On the issue of runoff related to the Tierra del Sol Solar project, minor impervious areas will be constructed for transformer pads, sub-station pads, foundation posts for the solar panels, and the Operation & Maintenance building. The project would also result in the construction of 10 onsite drainage basins/areas, a number of infiltration trenches, and earthen swales to handle the site drainage. Furthermore, the exposed ground and the areas underneath the panels will be replanted with native plants and a permeable nontoxic soil binding stabilization agent will be applied on the onsite roads. In summary and as required by storm water and hydromodification standards, the grading of the site will mimic the existing terrain and the drainage patterns will remain unchanged, which will help to keep the pre-project peak flow rates relatively unchanged.

On the issue of glare related to the Tierra del Sol Solar project, the Department has requested the applicant to provide a technical analysis to address the concern of glare. The analysis is required to include discussions on how the project would address the issue of glare so as to not adversely affect surrounding residents and drivers using surrounding roadways. Furthermore, it is not anticipated that implementation of the project, including other solar projects in the area, would lead to an increase of vehicle accidents and health problems.

On the issue of heat generated by solar farms, solar panels are designed to convert energy but would not radiate heat outward or offsite. The normal operating temperature of a solar panel would be approximately 172 degrees during a typical summer day while the temperature underneath the panel would be significantly lower given the shade generated under the panels. Additionally, the panels are designed to allow airflow both inside and outside the module to sustain a constant temperature. There is also no evidence that the panels would cause updraft conditions causing obstruction to aerial operations and the Department is coordinating with the appropriate federal agency to ensure no impacts to their operations would occur. To address the impacts related to fire safety, the project will require sufficient clearing of vegetation to serve as fuel modification zones and the Department is working in coordination with the local fire agency to ensure service can be provided to the project site.

On the issue of wind turbines, the Department is currently in the process of drafting a wind ordinance to address the siting and suitability of said facilities within the County. During the

process of drafting the proposed ordinance, the Department has worked closely with various stakeholders including the local community group and the US Border Patrol. Under the County's proposed wind ordinance, all large turbines will be required to obtain a Major Use Permit. During the review of a Major Use Permit, shadow flicker and noise impacts, among others, will be analyzed as part of environmental review process which will require the preparation of shadow flicker and noise studies to analyze the potential impacts resulting from the operation of said facility and will provide project specific mitigation, as necessary. As for fire safety and aerial operations, turbines are monitored 24 hours a day and are equipped with automatic speed controls as well as manual shuts offs in the event of an emergency such as a fire and procedures have been put in place to update public safety mapping databases when large turbines are developed within the unincorporated County.

To address the long term effect related to the operation of a wind turbine, the County's Health and Human Services Agency (HHSA) conducted a review of research on the human health effect of wind turbines and issued a Public Health Position Statement. HHSA's analysis included examining the available research on potential health impacts from noise, electromagnetic radiation, shadow flicker, blade glint and land surface temperature relationship. Based on the review of the available evidence, including journal articles, surveys, literature review and government reports, HHSA concluded that while anecdotal reports support adverse health effects, there are no epidemiological evidence-based studies to support direct pathological effects from wind turbines and that any potential impact on humans can be mitigated by following existing planning guidelines related to turbine placement.

If you have any questions or requests for information on the Tierra del Sol Solar project, please contact Ashley Gungle, PDS Project Manager, at (858) 495-5375 or via email at ashley.gungle@sdcounty.ca.gov. If you have any other questions or need additional information on the matters included in this letter, please contact me at (858) 694-3722 or e-mail at sami.real@sdcounty.ca.gov.

Sincerely,



SAMI REAL, Project Planning Division Chief
Planning & Development Services

